

Smart OER: Bridges for Sustainable Education



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Let me share some reflections on how Smart OER can be effective bridges for achieving sustainable education. I have prepared this presentation with my colleagues Dr Ishan Abeywardena and Dr Sanjaya Mishra.

In 2017, after five years of the OER Paris Declaration, the world community met at Ljubljana, Slovenia to celebrate the progress of OER at the 2nd World OER Congress. The theme was ‘OER for Inclusive and Equitable Quality Education: from Commitment to Action’.

The Commonwealth of Learning organised six regional consultations on OER leading to the 2nd World OER Congress.

In 2012, our main objective was to foster governmental support for OER internationally. In 2017 we wanted to involve many more stakeholders so that OER can be mainstreamed and implemented at all levels. Six years ago, the focus was on promoting policy development but as we know, that is not enough -- we need strategies for implementing policies. At that time, the primary objective was to seek governmental commitment. Now we need to move beyond commitment to concrete action for achieving the education and training goals of Member States.

COL prepared a global report on OER based on the consultations and two surveys of governments and stakeholders that were carried out to gauge the status of OER globally. What were the global trends?

The Global OER report revealed that there are more OER policies especially at the institutional level. Governments are supportive but this does not always translate into explicit policies. However, the OER activities are thriving even without the overarching policies.

The report shows that there are many more repositories today than there were five years ago. Most repositories are at the tertiary level and those from the global north are more likely to be used. Limited use of these repositories suggests that they must be more widely publicised and user-friendly. If you build it, they will not necessarily come!

More people are aware of the benefits of OER and the circle of champions and advocates has certainly grown. However, the meaning of ‘open’ means different things to different people. Even as more governments are offering MOOCs, these are not always open. While there is a growing recognition for promoting open textbooks, there needs to be more emphasis on learning resources for lifelong learning.

The report suggests that the way forward would be to continue with evidence-based advocacy, capacity building and support for policy development.

Within this context, let me focus on what we consider SMART OER. To us smart OER will foster sustainable education by bridging three major divides: (i) bridging the Technological Divide, (ii) reaching People with Disabilities, and (iii) crossing Linguistic Barriers.

First, the increasing adoption of smartphones has led to a rapid rise in the use of instant messaging across the globe. Today, instant messaging has surpassed text messaging as the most widely used application. The top four messaging apps in terms of monthly active users are WhatsApp, Facebook Messenger, WeChat and Viber. It is estimated that these messaging apps have over three billion active users monthly (as of early 2016).

COL has been a pioneer in the use of messaging as a powerful way of engaging learners, especially in flexible and informal segments. The Lifelong Learning for Farmers initiative has used a form of interactive messaging with basic mobile phones to generate measurable economic impact among very large numbers of farmers. COL has also successfully explored deploying sophisticated messaging services to offer a massive open online course for gardeners on a large scale. Data show that connected learners tend to prefer mobile devices.

COL has developed Aptus or the Classroom Without Walls using readily available and low cost components at about \$150. Aptus does not require power from the mains. We can use solar chargers instead. It does not require any connectivity. We use a wireless router. All this enables teachers and students to access good quality digital materials through this device. Learners can access the Wikipedia for schools containing over 6000 articles. Or the 2000 Khan Academy videos, covering topics relevant to learners in primary schools or high schools. A whole library of free books is also available. In addition, teachers can develop and upload their own content. Deployment of Aptus in remote places with low access to Internet have improved student learning and teacher motivation. This is being deployed in Tonga in the aftermath of Cyclone Gita when school resources and textbooks have been destroyed.

COL has also supported the development of mooKIT and an offline version of massive open online course that can be downloaded and used anytime through a smartphone. With appropriate technology innovations and support systems, it is possible that messaging services could move from the periphery to a more central space in education in developing countries. Innovations in harnessing messaging applications in educational technology will be helpful for affordably reaching and engaging more learners.

The second major gap that needs to be bridged is making OER accessible for people with disabilities. Accessibility guidelines for digital content are not new. Arguably, the World Wide Web Consortium or W3C is the de facto standard used when it comes to ensuring accessibility of web based content. According to W3C, there are four principles of accessibility¹:

Perceivable - This means that users must be able to perceive the information being presented.

Operable - User interface components and navigation must be operable. This means that users must be able to operate the interface. The interface cannot require interaction that a user cannot perform;

Understandable - This means that users must be able to understand the information as well as the operation of the user interface. The content or operation cannot be beyond their understanding; and

¹Source: <https://www.w3.org/TR/UNDERSTANDING-WCAG20/intro.html#introduction-fourprincs-head>

Robust - Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies. This means that users must be able to access the content as technologies advance. As technologies and user agents evolve, the content should remain accessible

How accessible are available OER? The College Open Textbooks Collaborative² in the USA is a collection of twenty-nine educational non-profit and for-profit organizations which is focused on driving awareness and adoption of open textbooks to more than 2000 community colleges. Their website reviews open textbooks for accessibility using the POUR parameters. In most cases, they found that the robustness criteria scores low indicating that those OER were less amenable to the use of assistive technologies.

The Ljubljana OER Action plan 2017 provides key recommendations with respect to accessibility for mainstreaming OER. Let me just refer to two.

The Action Plan recommends that we provide OER in accessible formats that support effective use by all, including persons with disabilities, by using existing international guidelines for accessibility.

Another recommendation requires us to ensure that OER accessed through different media, including mobile devices, are available and accessible in formats which allow for its use, adaptation, combination and sharing. When juxtaposed, the recommendations of the Ljubljana OER Action and the W3C standards provide a specific, measurable, accessible, reusable and transformative or SMART starting point for OER.

Linguistic and cultural diversity continues to be a challenge within the OER movement, which is predominantly in English. However, modern technological advancements in natural language processing, real-time translation and Unicode standards have enabled teachers to contextualize material to suit their learners with minimum effort. Similarly, Chatbots, a new suite of technologies that bring together developments in artificial intelligence and mobile messaging, are being deployed in areas such as customer service and content delivery in multiple languages. They are found increasingly on platforms that rely on text-based conversational messaging. So providing local language support using mobile phones is very effective as we have discovered in COL's Lifelong Learning for Farmers initiative.

The Tamil Nadu Lifelong Learning for Farmers OER Federation in India has now developed an OER repository, which is created by farmers for farmers in Tamil language. L3fpedia provides an easy to use single interface when searching for farming related OER, in the Tamil language, made available by multiple institutions and organizations. The federation harvests metadata from partners' repositories to create a searchable index of resources, including text, audio and video, which help farmers increase their yield while adopting sustainable practices. Further, this project addresses the recommendations in the Ljubljana OER Action Plan for deploying user-friendly technology.

In short, SMART OER are built upon the edifice of appropriate and affordable technology, that is accessible to people with disabilities and usable in multiple languages. When an OER is developed for people with disabilities, it is more accessible to everyone, and a course is developed in such a way that it can be easily machine translated, making cross-border education possible. However, a truly SMART OER is Specific to the Context, Measurable in terms of impact on learning outcomes, Accessible, adaptable and available, Reusable and relevant, and Transformative. Creative uses of technology will lead to the development of SMART OER, which will contribute to achieving sustainable education for all.

Thank you for your attention.

²Source: <http://www.collegeopentextbooks.org/textbook-listings/accessibility-reviews>